

# **IDENTIFICATION OF MEASURES RELATED TO CROSS-CULTURAL COMPETENCE**

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## **Introduction**

### ***Purpose***

This task, the first of five tasks in a project to support Cultural Readiness for the Department of Defense, represents the first step in the development of a “paper and pencil” questionnaire measure of cultural competency. The purpose of this task was to identify measures that are reliable and valid for the measurement of cultural competency. Thus, our approach was to identify existing measures in published peer-reviewed literature in order to understand the available instruments, the dimensions and constructs they measure, the purposes and previous uses of these metrics, and their reported psychometric properties. This document provides an overview of the project as a context for this task, provides the findings of this task, and discusses next steps in the project.

### ***Project Overview***

This initial project supports the assessment of capabilities and requirements leading to the development of a common framework in order to “set the stage” for input to policy, as well as for research and training efforts by the emerging Department of Defense Cultural Center of Excellence. Thus, the overall purpose of this project is to develop a framework of cultural competence and its related measures.

The project includes five tasks:

- 1) Identify Measures Related to Culture
- 2) Establish Key Operational Definitions
- 3) Review of the Literature
- 4) Collection of Baseline Measures
- 5) Preliminary Report of Results

Identification of existing measures is the first step in the development of a measurement tool and in the development of a framework that includes and links the constructs that are part of cultural competency. To clarify how this first step supports the development of a

measurement tool and how we conceive of this task in the context of the overall project, we briefly review the process for metric development in the next section.

## **Methodology for Developing a Measure of Cross Cultural Competence**

To develop a questionnaire that is psychometrically valid and reliable – that measures what it purports to measure with a high degree of reliability and consistency – researchers must adhere to the *five steps* of questionnaire design. These include conceptualization, prototype construction, questionnaire tryout, item analysis, and revision (Cohen & Swerdlik, 2002). The **conceptualization** phase often starts with a *review of the literature of the existing questionnaires* that have been designed to measure the construct of interest, in this case, cultural competency and its related manifestations. This task addresses this first step of metric design. Conducting such a review might reveal that such measures leave something to be desired in terms of psychometric soundness, which serves as the stimulus for developing the new measure (p. 189, Cohen & Swerdlik, 2002). In addition, we believe that the existing measures may leave something to be desired in terms of the constructs assessed as well as the relevance of existing measures for the purposes of the current assessment requirements.

In addition to literature review, in order to conceptualize the overall construct of interest (i.e., cultural competency), some basic issues must be addressed. These include coming up with a precise definition of *what* exactly is being measured, *how* it will be measured, the *format* of the questionnaire, *benefits* to such measurement, and the *meanings of the scores* derived, among others. First and foremost in this process, the conceptual criteria should be carefully identified to include all of the important dimensions of performance. This will involve not only theoretically-based hypotheses of important constructs that make up a measure of cultural competency, but also detailed explications of what performance success looks like that can be tied to all of the important and relevant outcomes of mission effectiveness. As part of conceptualizing what exactly is being measured, for Task 2 we plan to go beyond the theoretical constructs that can be demonstrated psychometrically in order to create those detailed explications of mission

relevant performance through the conduct of *open-ended interviews focused on critical incidents (CI) related to cultural competency*. Interviews can be conducted with people who are identified through existing questionnaires or, as we plan to do in this case, *with people who are believed to possess varying degrees of the competency in question as gained by field experience*. These interviews are expected to lead to more targeted structured interviews which will more directly assess the construct of interest, leading to additional items for the measurement instrument as well as “thick” descriptions of challenges and competencies in the field.

Thus, we are undertaking a two-tiered approach to the conceptualization of operational definitions of cultural competency. Cultural competency must be defined for the purposes of this project both in terms of the psychological variables that can be measured in questionnaire formats *and* in relation to the unique performance challenges required in the context of mission performance. This combination of conceptual criteria, or constructs, along with skill descriptions based on the challenges faced by experienced members of the military as they make judgments and decisions and as they communicate to achieve the goals of current missions will form our **operational definitions** of cultural competency in Task 2.

The ordering of these first two steps (i.e., development of conceptual criteria and exploration of field performance effectiveness) is critical in order to prevent the all-too-common practice of using outcome criterion measures simply because they are available or easily developed. Beginning with a hasty “front-end analysis” can lead to erroneous and misleading training objectives and policies, as well as a shaky foundation for future research. As noted, we believe that there may be two important and complementary aspects to the assessment of competence that we need to pursue. Interviews during Task 2 will inform our understanding of this issue. The results of our questionnaire development efforts combined with the results of our CI interviews will allow us to determine the

value of each approach, construct an initial questionnaire, and construct an initial approach to performance-based assessment as well.<sup>1</sup>

The next step in questionnaire development is the creation of a **prototype** for administration in a pilot study. Because cultural competency is multidimensional, many more questions than needed should initially be included in such as prototype. This will allow us, during pilot-testing, to assess as many possible manifestations of different content areas that may be relevant to the construct of interest. Therefore, as large an item pool of questions as possible will be used to ensure adequate content coverage (as well as construct validity). This process “may entail the creation, revision, and deletion” of many items, “as well as literature reviews, experimentation, even soul-searching” (p. 191, Cohen & Swerdlik, 2002). This approach of creating a large pool of questions will be tempered by the knowledge that there are practical limits to people completing questionnaires both from questionnaire development and implementation points of view.

In terms of the construction of our pilot instrument, we will adhere to the generally accepted concepts of questionnaire construction. Scaling is an important part of construction involving setting rules for assigning numbers in measurement. A five- to seven-point Likert scale is generally used, as this consistency makes it easier for respondents to complete the questionnaire, makes it easier to score, and enhances validity. Additionally, items must be phrased carefully, simply, and unambiguously, as recommended by psychometricians (Rust & Golombok, 1989). As such, the use of double-negatives must be avoided and each item must only ask about *one* issue. Another caution to keep in mind is that an understanding of any key concepts should not be assumed in participants; therefore, questions should not ask respondents directly about the constructs of interest, which may contain unfamiliar terms to them. Social desirability bias is usually managed by instructions to avoid spending too long on any one question and by emphasizing that the first response is usually the best response.

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<sup>1</sup> Initial interviews that can be funded as part of this project will be limited and will allow us to understand the nature of the challenges and competencies, but will not provide results that are extensive enough to fully develop an approach to performance-based assessment or a complete model of performance-based competency.

**Questionnaire tryout** is the third phase in developing a psychometrically sound questionnaire. Having created a large pool of items, it is necessary to administer the questionnaire to as large of a pool of participants as possible, certainly *no fewer than five participants per item* (preferably ten per item), should be available. With any smaller sample size, we will run the risk of “phantom factors,” nonexistent factors that emerge in factor analysis when a sample size is too small. Given the access to large numbers of potential participants through the existing survey population, we do not anticipate a problem with sample size. However, given the restrictions on how many items can be added to the existing survey administrations, there may be difficulty in piloting an adequate item pool during development.

**Item analysis**, which involves complex statistical procedures, follows. Basically, this involves statistics that yield item differentiation, item-validity, and item-reliability indices to determine: (1) if items differentiate or discriminate well between those who are high versus low on the particular characteristic being measured (i.e., cultural competence); (2) the degree to which each item measures what it purports to measure; and (3) the internal consistency of the questionnaire as a whole. Further, in order to assess the inter-item consistency, whether items appear to be measuring the same thing as a whole, factor analysis is used. Subjecting findings to an exploratory and confirmatory factor analysis will serve to refine our operational definitions and provide empirically-based definitions of the constructs.

Having conceptualized the new questionnaire, constructed it, tried it out, and analyzed the items, the next step is to act upon all of the information obtained in the analyses and mold the questionnaire into its final form. Many of the items will have been eliminated and others rewritten based upon such analyses as to which items were the weakest. This is the advantage of a large item pool – many poorer items can be eliminated, making the final form as robust as possible.

## **Existing Measures Related to Cultural Competence**

Our review describes 13 studies covering a range of constructs related to cultural competency, and the metrics that were used for a variety of purposes. Only those studies that reported psychometric data (i.e., reliability, validity) were included in our review. This necessarily limited the breadth of studies included herein. As can be seen from the Appendix, there are several measures related to cultural competency that have been developed over the years. The measures developed, and the constructs they assess, depend upon the purpose and type of competency required as well as the population of interest.

Much of this research is business driven. For instance, the explosive growth in globalization has led to a growing number of people with international assignments, international joint ventures and people moving to other countries to work. Because of this phenomenon, cultural competence has become increasingly important in business management. Thus, several measures have been developed for business purposes (e.g., Koester & Olebe, 1988; Matsumoto et al., 2001; Van der Zee & Van Oudenhoven, 2000).

Because administrators of mental health systems and agencies wish to hire culturally competent providers and to train their providers to be culturally competent (Sue, 2003), several measures were developed and validated for measuring multicultural competence (a similar, related construct) as it relates to psychologists, therapists, social workers, and mental health counselors who treat diverse populations of patients. Most of these are self-report (e.g., D'Andrea, Daniels, & Heck, 1991; Holcomb-McCoy & Myers, 1999; LaFromboise et al., 1991; Ponterotto et al., 1996; Sadowsky, Taffe, Gutkin, & Wise, 1994); however, we found one measure that is a “consumer”-based measure (e.g., Cornelius, Booker, Arthur, Reeves & Morgan, 2004).

Beyond the divergent purposes of the particular instruments developed, the measures also differ in terms of the constructs they assess. That is, some were designed to measure hypothesized predictors, or antecedents, of behavior, such as personality traits. These



traits are expected to lead individuals to perform certain behaviors; these behaviors are then, in turn, expected to lead to the desired outcomes that define effectiveness (for the particular purpose they were designed). However, each link in this causal chain is oftentimes not tested empirically and/or statistically by researchers. Such predictors of performance include those that are cognitive-based (e.g., knowledge) as well as personality-based (e.g., openness, extraversion, etc.). Therefore, it is not clear how many items, if any, of the existing measures we can use in our prototype and how many items we will have to develop ourselves. It is simply too early to tell.

Conceptually, the predictors of the processes of performance lead to the outcomes that enable mission success. However, we must work backward, starting with the conceptual criteria that define mission success, in order to ensure that our measures are relevant, neither deficient nor contaminated, at each step. Often, researchers do not do this and skip steps, coming up with metrics that predict processes and measure the antecedents of performance, but if these processes do not lead to important outcomes (i.e., results), there is no practical value in them. Only after identifying desired mission-related performance outcomes and those constructs that are conceptually related to those outcomes can we begin to develop an instrument to specifically identify individuals who possess the relevant characteristics (antecedents of performance) that actually lead to the results we desire.

### **Next Steps in the Development of a Cross Cultural Competence Framework and Related Measures**

Our next step in the project is Task 2, the establishment of *operational definitions*. This task is essentially the establishment, a priori, of the constructs we believe we will be measuring based on the literature and further explication of cultural competency through CI interviews. As stated above, we expect that we will find, through analysis of the measures identified here and the results of the interviews, that there are constructs that should be measured via questionnaire administration and others that are skill-based and must be measured in performance environments in order to ground competency within

mission effectiveness and readiness. Therefore, the results of Task 2 will provide us with the direction needed to address Task 3, the literature review.

In Task 3, we will further finalize the constructs we wish to measure, as to their theoretical underpinnings, and format our prototype questionnaire for pilot administration in Task 4. We will describe our rationale for the resulting pilot questionnaire, and discuss the research and practical issues related to performance-based measurement. Additionally, Task 4 requires the collection of “baseline measures.” We understand baseline measures to mean establishment of some preliminary normative data in the existing population. To accomplish this task, we must conduct several administrations to complete the questionnaire development and then collect initial baseline data using the final form.

This project concludes with our final report on the results of this initial effort, the findings from each task, and the overall results and conclusions with our recommendations for a framework of cultural competence and its measurement. We will also include results generated from the administration of the questionnaire’s final form, as well as recommendations for further development on the future utilization and application of findings from this project.

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### Appendix: Table of Measures Related to Cross Cultural Competence

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
Multicultural Competency Instrumentation: A Review and Analysis of Reliability Generalization	<ul style="list-style-type: none"> <li>• <i>Multicultural Counseling Inventory</i> (MCI; Sodowsky, Taffe, Gutkin, &amp; Wise, 1994)</li> <li>• <i>Multicultural Awareness Knowledge and Skills Survey</i> (MAKSS; D'Andrea, Daniels, &amp; Heck, 1991)</li> <li>• <i>Cross-Cultural Counseling Competence Inventory-Revised</i> (CCCI-R; LaFromboise et al., 1991)</li> <li>• <i>Multicultural Counseling Knowledge and Awareness Scale</i> (MCAS: B; Ponterotto et al., 1996)</li> <li>• <i>Multicultural Counseling Competence and Training Survey</i> (MCCTS; Holcomb-McCoy &amp; Myers, 1999).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Multicultural Competency</i> (in the context of counseling)</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptable internal consistency coefficients over time and across populations.</li> <li>• Specifically, the MCI, MAKSS (currently the MAKSS-CE-R), CCCI-R, and MCKAS may appropriately be used across many populations and settings.</li> </ul>	Dunn, Smith, & Montoya (2006)	<ul style="list-style-type: none"> <li>• This is a comprehensive review of internal consistency reliability of multicultural competency instrumentation out of the more than 800 manuscripts that have addressed multicultural competence in mental health professional training and assessment.</li> </ul>



Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
Appreciating Similarities and Valuing Differences: The Miville-Guzman Universality-Diversity Scale	<ul style="list-style-type: none"> <li><i>Miville-Guzman Universality-Diversity Scale (M-GUDS)</i>, a 45-item scale administered to 4 samples.</li> </ul>	<ul style="list-style-type: none"> <li><i>Universality-Diversity Orientation (UDO)</i>, a construct that was defined in this study as an attitude of awareness and acceptance of both the similarities and differences that exist among people.</li> </ul>	<ul style="list-style-type: none"> <li>Significant correlations in theoretically predicted ways with measures of racial identity, empathy, healthy narcissism, feminism, androgyny, homophobia, and dogmatism.</li> <li>Discriminant validity displayed by scale failing to correlate with Scholastic Achievement Test Verbal scores, although mixed results were obtained with social desirability.</li> <li>Internal consistency and retest reliability ranged from .89 to .95</li> <li>In sum, the data suggest considerable reliability and initial construct validity for the M-GUDS.</li> </ul>	Miville, Holloway, Gelso, Pannu, Liu, Touradji, & Fuertes (1999)	<ul style="list-style-type: none"> <li>Vontress (1996) proposed that people are the products of several cultures that interact with each other: (a) universal, (b) ecological, (c) national, (d) regional, and (e) racioethnic.</li> <li>Universal culture refers to "the all encompassing humanness in each of us which pervades all cultures.</li> <li>No matter what the conditions are under which people live, they must adjust to the fact that they are human beings" (Vontress, 1996, p. 164).</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
Development of Counseling Trainees' Multicultural Awareness Through Mentoring English as a Second Language Students	<ul style="list-style-type: none"> <li>• <i>Multicultural Counseling Inventory</i> (MCI; Sodowsky et al., 1994)</li> <li>• <i>Multicultural Social Desirability Scale</i> (MCD; Sodowsky, Kuo-Jackson, Richardson, &amp; Corey, 1998)</li> <li>• <i>White Racial Identity Attitudes Scale</i> (WRIAS; Helms, 1990)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Multicultural Competency</i>-multicultural skills, awareness, knowledge, and relationship.</li> <li>• <i>Multicultural Desirability</i> - the expression of thoughts and behaviors motivated by a desire to avoid the appearance of stereotype bias.</li> <li>• <i>Racial Attitudes</i> – positive attitudes of Whites towards African Americans</li> </ul>	<ul style="list-style-type: none"> <li>• MCI - Cronbach's alpha coefficients have been stable across studies, with the average alpha of .87 for the full scale, .75 for skills, .77 for awareness, .66 for relationship, and .75 for knowledge (e.g., Constantine, 2001; Worthington et al., 2000).</li> <li>• MCD - In previous studies, internal consistency ranged from .75 (Sodowsky et al., 1998) to .73 (Hansen et al., 2004).</li> </ul>	Roysircar, Gard, Hubbell, & Ortega (2005)	<ul style="list-style-type: none"> <li>• The first author has written on trainees' practice of the self-reflexive process (Roysircar, 2003, 2004) with descriptions of trainees' reflections on <i>critical incidents</i> with clients that resulted in trainees' "increased understanding of self and others, and a greater appreciation and respect for differences" (Roysircar, 2003, p. 34) as well as an increased ability to "retell the story, incorporating the client's worldview and correcting one's assumptions, values, and biases" (p. 663).</li> </ul>
Development of the Multicultural Counseling Inventory: A Self-Report Measure of Multicultural Competencies	<ul style="list-style-type: none"> <li>• <i>Multicultural Counseling Inventory</i> (MCI)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Multicultural Counseling Skills</i></li> <li>• <i>Multicultural Awareness</i></li> <li>• <i>Multicultural Counseling Relationship</i></li> <li>• <i>Multicultural Counseling Knowledge</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sufficient evidence was found for the existence of 4 specific factors</li> <li>• Results show moderate to moderately high internal consistency reliabilities and moderate interfactor correlations.</li> </ul>	Sodowsky, Taffe, Gutkin, & Wise (1994)	<ul style="list-style-type: none"> <li>• Original development of the Multicultural Counseling Inventory (MCI), a self-report instrument that measures multicultural counseling competencies.</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
The Scale of Ethnocultural Empathy: Development, Validation, and Reliability	<ul style="list-style-type: none"> <li>• <i>Scale of Ethnocultural Empathy</i> (SEE)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Ethnocultural Empathy</i> (cultural empathy) - empathy toward people of racial and ethnic backgrounds different from one's own</li> <li>• <i>Intellectual Empathy</i> – the cognitive component of above - the ability to perceive the world as another person does.</li> </ul>	<p>Four Factors derived:</p> <ul style="list-style-type: none"> <li>• Empathic Feeling and Expression</li> <li>• Empathic Perspective Taking</li> <li>• Acceptance of Cultural Differences</li> <li>• Empathic Awareness.</li> </ul> <p>High internal consistency and test-retest reliability estimates were found across the three studies as well as evidence of construct validity.</p>	Wang, Davidson, Yakushko, Savoy, Tan, & Bleier (2003)	<ul style="list-style-type: none"> <li>• Quintana's (1994) theory of social perspective-taking operationalizes constructs as cognitive developmental abilities.</li> <li>• Such abilities contain associated developmental levels: "awareness of perspectives, attitudes, and experiences shared by ethnic group," and the "enhanced ability to take the perspective of other ethnic groups" (p. 163).</li> </ul>
Measuring Intercultural Sensitivity: The Intercultural Development Inventory  (Continued ...)	<ul style="list-style-type: none"> <li>• <i>Intercultural Development Inventory</i> (IDI)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Intercultural competence</i> - the ability to think and act in inter-culturally appropriate ways.</li> </ul>	<p>Five factors derived:</p> <ul style="list-style-type: none"> <li>• DD (Denial/Defense) (14 items)</li> <li>• R (Reversal) (9 items)</li> <li>• M (Minimization) (10 items)</li> <li>• AA (Acceptance/Adaptation) (14 items)</li> <li>• EM (Encapsulated/Marginality) (5 items)</li> <li>• Scale reliabilities (coefficient alpha) were 0.70 or higher:</li> </ul>	Hammer, Bennett, & Wiseman (2003)	<ul style="list-style-type: none"> <li>• Authors argue that greater intercultural sensitivity is necessary for greater intercultural competence.</li> <li>• Based on the theoretical framework for conceptualizing dimensions of intercultural competence by Bennett (1986, 1993), in his developmental model of intercultural sensitivity (DMIS).</li> <li>• The DMIS consists of three ethnocentric orientations, where one's</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
			<ul style="list-style-type: none"> <li>• DD scale - alpha=0.85</li> <li>• R scale - alpha=0.80</li> <li>• M scale - alpha=0.85</li> <li>• AA scale - alpha=0.84</li> <li>• EM scale - alpha=0.80</li> </ul>		<p>culture is experienced as central to reality (Denial, Defense, Minimization), and three ethnorelative orientations, where one's culture is experienced in the context of other cultures (Acceptance, Adaptation, Integration).</p>
<p>The Validity and Reliability Testing of a Consumer-Based Cultural Competency Inventory</p>	<ul style="list-style-type: none"> <li>• <i>Consumer-Based Cultural Competency Inventory</i></li> </ul>	<p><i>Cultural Competency</i> - Consumer assessment of the cultural competency of mental health providers.</p> <p>Subscales include:</p> <ul style="list-style-type: none"> <li>• <i>Language fluency</i></li> <li>• <i>Understanding indigenous practices</i></li> <li>• <i>Acceptance of cultural differences</i></li> <li>• <i>Awareness of patient's culture</i></li> <li>• <i>Respectful behaviors</i></li> <li>• <i>Patient-provider interactions</i></li> <li>• <i>Consumer involvement</i></li> <li>• <i>Consumer outreach</i></li> </ul>	<ul style="list-style-type: none"> <li>• Construct validity was evaluated by examining the correlations between each of the 8 subscales as well as by factor analysis.</li> <li>• Reliability was assessed using Cronbach's alpha for all 52 items (alpha = .91, eta square = .13).</li> <li>• In sum, the overall scale does a good job of measuring the concept of cultural competency (as defined in this study).</li> </ul>	<p>Cornelius, Booker, Arthur, Reeves &amp; Morgan (2004)</p>	<ul style="list-style-type: none"> <li>• Rather than a <i>cross-cultural</i> measure, this was developed for use among <i>subcultures</i> (e.g., Native Americans, Asian Americans) within the American culture.</li> <li>• Of interest in that it relies upon third-party ('consumer') assessment rather than self report data.</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
The Munroe Multicultural Attitude Scale Questionnaire: A New Instrument for Multicultural Studies	<ul style="list-style-type: none"> <li>• <i>Munroe Multicultural Attitude Scale Questionnaire (MASQUE)</i></li> </ul>	Multicultural Attitude Transformation: <ul style="list-style-type: none"> <li>• <i>Knowledge</i> ('know')</li> <li>• <i>Empathy</i> ('care')</li> <li>• <i>Active Experience</i> ('act')</li> </ul>	<ul style="list-style-type: none"> <li>• Reliability of the total MASQUE scale scores was adequate for general research purposes</li> <li>• Only 2 of the 3 subscales were acceptable for exploratory purposes</li> <li>• EFA showed that three constructs emerged, and none were complex</li> <li>• The low correlation obtained between the MASQUE scores and the Marlowe-Crowne may provide evidence of validity in that participants reflected multicultural attitudes rather than socially desirable responses.</li> </ul>	Munroe & Pearson (2006)	<ul style="list-style-type: none"> <li>• The purpose of this study was to develop and initially validate scores from an instrument that used Banks' transformative approach as the foundation for the corresponding stages of development that are associated with attitude formation.</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
Development and Validation of a Measure of Intercultural Adjustment Potential in Japanese Sojourners: The Intercultural Adjustment Potential Scale (ICAPS)	<ul style="list-style-type: none"> <li>• <i>Intercultural Adjustment Potential Scale (ICAPS)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Examined item content from a number of valid and reliable personality inventories assessing psychological constructs related to:</li> <li>• <i>Emotion regulation</i></li> <li>• <i>Critical thinking</i></li> <li>• <i>Openness and Flexibility</i></li> <li>• <i>Interpersonal security</i></li> <li>• <i>Emotional commitment to traditional ways of thinking</i></li> <li>• <i>Tolerance of ambiguity</i></li> <li>• <i>Empathy.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Eight studies provide evidence for internal, temporal, and parallel forms reliability, predictive validity with both subjective indices of adjustment and psychometrically standardized measures, peer ratings, and expert ratings.</li> <li>• Convergent validity with a similar measure, construct validity with various personality scales, and incremental validity are good.</li> <li>• External validity in predicting changes as a result of intercultural seminars and in identifying experts who work in the intercultural field was also provided.</li> </ul>	Matsumoto et al. (2001)	<ul style="list-style-type: none"> <li>• The underlying factor structure suggests a model of the psychological components related to intercultural adjustment, including emotion regulation, openness, flexibility and creativity or personal autonomy.</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
The Multicultural Personality Questionnaire: A Multidimensional Instrument of Multicultural Effectiveness	<ul style="list-style-type: none"> <li>• <i>Multicultural Personality Questionnaire</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Cultural Empathy</i></li> <li>• <i>Open-mindedness</i></li> <li>• <i>Emotional Stability</i></li> <li>• <i>Orientation to Action</i></li> <li>• <i>Adventurousness/ Curiosity</i></li> <li>• <i>Flexibility</i></li> <li>• <i>Extraversion</i></li> </ul>	<ul style="list-style-type: none"> <li>• Internal consistencies of the scales were high, except Open-mindedness and Flexibility.</li> <li>• Four reliable higher-level dimensions were distinguished: <i>Openness, Emotional Stability, Social Initiative, and Flexibility</i></li> <li>• The correlations between these dimensions and related instruments were in the expected direction.</li> <li>• Predictive value of multicultural activity and its incremental value above the Big Five in predicting international orientation and aspiration of an international career were shown.</li> </ul>	Van der Zee & Van Oudenhoven (2000)	<ul style="list-style-type: none"> <li>• The Multicultural Personality Questionnaire may be used as an instrument for the selection of expatriates or as a diagnostic tool for assessing further training needs.</li> </ul>

Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
<p>The Worldview Assessment Instrument (WAI): The development and preliminary validation of an instrument to assess world view components relevant to counseling and psychotherapy</p>	<ul style="list-style-type: none"> <li>• <i>The Worldview Assessment Instrument (WAI)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Beliefs</i> concerning the mutability of human nature</li> <li>• <i>Agency</i> (voluntarism-determinism)</li> <li>• <i>Locus of responsibility</i></li> <li>• <i>Relation to authority</i></li> <li>• <i>Relation to group</i> (individualism-collectivism)</li> <li>• <i>Metaphysics</i> (ontological spiritualism-materialism)</li> </ul>	<ul style="list-style-type: none"> <li>• Scale-score-level factor analysis revealed three higher-order factors.</li> <li>• The results of Study 5, which developed the final WAI scales, showed that intercorrelations for scales were low, suggesting orthogonality (independence of dimensions)</li> <li>• The scales demonstrated adequate reliability</li> <li>• Further validation efforts are suggested.</li> </ul>	<p>Koltko-Rivera (2000)</p>	<ul style="list-style-type: none"> <li>• Five studies involving 709 participants from 4 U.S. states are described.</li> <li>• Appendixes G and H contain a ready-to-administer WAI protocol and scoring key.</li> <li>• Appendix I makes further recommendations for using the WAI in research, including multicultural psychology, among others.</li> </ul>
<p>Personality Correlates of the Four-Factor Model of Cultural Intelligence</p> <p>(Continued . . .)</p>	<ul style="list-style-type: none"> <li>• <i>Cultural Intelligence (CQ)</i></li> <li>• <i>Personal Characteristics Inventory (PCI: Mount &amp; Barrick, 1995).</i></li> </ul>	<p>CQ – Four Factors:</p> <ul style="list-style-type: none"> <li>• <i>Metacognitive CQ</i></li> <li>• <i>Cognitive CQ</i></li> <li>• <i>Motivational CQ</i></li> <li>• <i>Behavioral CQ</i></li> </ul> <p>Personality:</p> <ul style="list-style-type: none"> <li>• <i>Conscientiousness</i></li> <li>• <i>Emotional Stability</i></li> <li>• <i>Openness</i></li> </ul>	<ul style="list-style-type: none"> <li>• Conscientious was related to metacognitive CQ</li> <li>• Agreeableness and emotional stability were related to behavioral CQ</li> <li>• Extraversion was linked to cognitive CQ, motivational CQ, and behavioral CQ</li> </ul>	<p>Ang, Van Dyne &amp; Koh (2006)</p>	<ul style="list-style-type: none"> <li>• Study examined relationships between Big Five personality and the four-factor model of cultural intelligence (CQ)—metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ</li> <li>• The intriguing finding of this study is that</li> </ul>



Title of Study	Measure(s) used	Dimensions Assessed	Psychometric Properties/Results	Authors & Year	Comments
		<ul style="list-style-type: none"> <li>• <i>Extraversion</i></li> <li>• <i>Agreeableness</i></li> </ul>	<ul style="list-style-type: none"> <li>• Openness was related to <i>all four factors</i> of CQ (metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ)</li> </ul>		<p>Openness was the only Big Five that was significantly related to all four aspects of CQ.</p> <ul style="list-style-type: none"> <li>• Although this study is not a measure of CC, per se, it shows that personality is related to CQ, a component of CC.</li> </ul>
<p>The Behavioral Assessment Scale for Intercultural Communication Effectiveness</p> <p>(Continued ...)</p>	<ul style="list-style-type: none"> <li>• <i>Behavioral Assessment Scale for Intercultural Communication (BASIC) Effectiveness</i></li> </ul>	<p>Eight dimensions:</p> <ol style="list-style-type: none"> <li>1. <i>Display of respect</i> – ability to express respect for another</li> <li>2. <i>Interaction posture</i> – ability to respond in non-judgmental way</li> <li>3. <i>Orientation to knowledge</i> – how one explains the world</li> <li>4. <i>Empathy</i> – capacity to ‘put oneself in another’s shoes’</li> <li>5. <i>Task role behaviors</i> – contribute to group problem-solving activities</li> </ol>	<ul style="list-style-type: none"> <li>• Results of the administration of the BASIC measure to 263 college students demonstrated that the new scale correlated highly with another measure of communication effectiveness</li> </ul>	<p>Koester &amp; Olebe (1988)</p>	<ul style="list-style-type: none"> <li>• The eight dimensions of intercultural communication effectiveness assessed by the BASIC were originally developed by Ruben (1976).</li> </ul>

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		<p>6. <i>Relational role behaviors</i> build or maintain group relationships</p> <p>7. <i>Interaction behavior and management</i> – skills in governing interactions to meet needs &amp; desires of group members</p> <p>8. <i>Tolerance of ambiguity</i> – ability to react to new and ambiguous situations with little visible discomfort</p>			